

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 59307

Monday, May 31, 2010 1:03:18 PM



Page 2

Item ID: D6005-180

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Material

Start Date: 5/31/2010 Start Qty: 8.00



Cust Item ID:

Required Date: 6/7/2010 Req'd Qty: 8.00



Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Run Start



Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130



HandFinish

Chemical Conversion Coat per QSI005 4.1

0.00

Memo

0.00

Hand Finishing

140



QC

QC3- Inspect Part Finish

0.00

Memo

0.00

Quality Control

150



Packaging

Identify as per dwg & Stock Location: LG

0.00

Memo

0.00

Packaging

11-03-23

59

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____





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NOTE: Date & initial all entries


Work Order ID 59307


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Monday, May 31, 2010 1:03:18 PM

Item ID: D6005-180 Accept  Setup Start 
Revision ID: Stop 
Item Name: Crosstube Material
Start Date: 5/31/2010 Start Qty: 8.00  Cust Item ID:
Required Date: 6/7/2010 Req'd Qty: 8.00  Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start 
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 	QC21- Final Inspection - Work Order Release	0.00							
QC Quality Control	Memo	0.00							

11/3/23 

MF

11-03-23

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

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Page 1

Work Order ID: 59307



Parent Item: D6005-180



Parent Item Name: Crosstube Material


Start Date: 5/31/2010

Required Date: 6/7/2010

Comments: IPP Rev:C04.06.15 Added tolerance to Step 2 KJ/JLM

Start Qty: 8.00

Required Qty: 8.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6005-180P  Crosstube material		Purchased	No			120	Each	0.0000	1	8			

CL11/03/22

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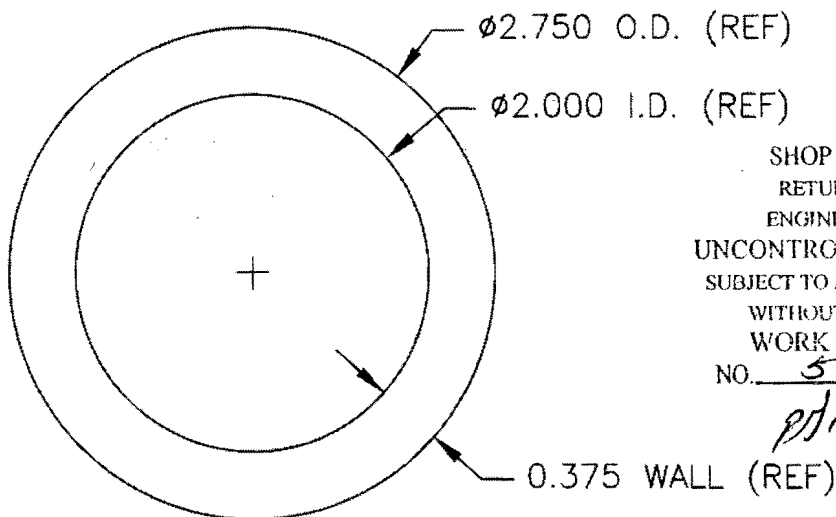
NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6005	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *A*



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 593 07
01/10-5-31

NOTES

- 1) D6005-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 128" LONG TUBE: D6005-128

- 2) MATERIAL: 2.750 OD x 0.375 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
WALL: ± 0.015 MEAN (± 0.038 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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NOTE: Date & initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO12020

Purchase Order Date 6/04/10

PO Print Date 6/04/10

Page Number 1 of 2

Order From :

VU-ALU001

ALUMINIUMWERK UNNA AG
UELZENER WEG 36, 59425 UNNA
GERMANY, GERMANY

Contact Name

Vendor Phone

303 755 5936

Vendor Fax

303 755 5672

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

10127-2607

Tax Resale Nbr

Net 30

Terms

Currency

USD

FOB

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED
6/16/10
c-4 mail

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6005-180P	Crosstube material	7/16/10 Yes	8.00 Each <i>Mg</i>		\$815.0000	\$6,520.00
		Special Inst: EXTRUDE AS PER DWG D6005 REV. A B59307 MATERIAL: 7075-T6/T6511 AS PER WW- T-700/7 OR QQ-A-225/9 OR QQ-A-200/11 SEAMLESS TUBE MINIMUM ULTIMATE TENSILE STRENGTH = 77KSI MINIMUM TENSILE YIELD STRENGTH = 66 KSI SIZE: 2.750" OD X 0.375" WALL TOLERANCE AS PER ASTM B210					
2	D6008-180P	Crosstube extrusion	7/16/10 Yes	12.00 Each		\$1,530.0000	\$18,360.00

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

Change Nbr: 1

Change Date: 6/04/10

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: Dart Aerospace Ltd.
Client: 1270 Aberdeen Street
 K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 1144/10
Cert No. / No. du certificat:

Bestellnummer: PO12020
Order No. / No. de commande:

Auftrag: 37901/1
Our Reference/Notre Reference:

Produkt: Rohre nahtlos gepresst
Product / Produit: Tubes seamless extruded

Spezifikation: AMS - QQ - A - 200/11; -
Specification:

Werkstoff: 7075
Alloy/Alliage:

Zustand: T 6511
Temper/État:

Abmessung: 2,750 INCH x 2,000 INCH x 0,375 INCH x 180,000 INCH
Size / Dimension: D6005-180

Kennzeichnung: ALUnna - Cert No. 1144/10 - 7075 - T6511 - Cast No. 3365 - AMS-QQ-A-200/11 - 2.750" OD x 0.375" Wall - Heat
Marking/Marquage: Lot No. 400542 - ALUnna Order Conf. No. 37901/1-1 - PO. 12020

Lieferung: pcs. lbs
Delivered Material / Matériel délivré: 9 461 **Country of Manufacture: Germany**
 Products are in accordance with applicable RoHS

1. Chemische Analyse Chemical Analysis / analyse chimique

Charge/ Cast No.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
min.			1,2		2,1	0,18	5,1						
max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
3365/09	0,119	0,220	1,459	0,060	2,479	0,200	5,820	0,038	0,003	0,0274	0,0001	0,0012	0,0001

Hydrogen content: 0,08 **ccm/100 g Al** Elements without indication < 0,01 % **country of melt manufacturer: Germany**

2. Mechanische Eigenschaften Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min.	81,0	73,0	7,0			
max.						
1	86,710	80,330	8,0			400542 - 9 pcs.

Sub 1/23

Ergebnis der Prüfungen: Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order
Resultats: Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande